This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A buoyancy control system for controlling the buoyancy of an underwater submersible, the system comprising:

a buoyancy chamber having a seawater inlet for allowing seawater to flow into the buoyancy chamber and a seawater outlet for allowing seawater out of the buoyancy chamber;

volume varying means for defining a variable volume within the buoyancy chamber to allow a volume of seawater contained in the buoyancy chamber to vary ~~a power supply used to power at least one electrical component of the system~~; and

a hydraulic system for pumping seawater from the buoyancy chamber through the outlet, the hydraulic system comprising a hydraulic pump and a pressure multiplier, the hydraulic pump for applying pressure to the pressure multiplier, and the pressure multiplier for increasing the pressure applied thereto by the hydraulic pump, and for applying the increased pressure to seawater from the buoyancy chamber to thereby pump out the seawater.

2. (Original) A system according to claim 1 further comprising regenerative means whereby the flow of seawater passing into said inlet is converted into electrical energy for re-charging a power supply.

3. (Currently Amended) A system according to claim 2 wherein the regenerative means is configured to operate when the system is ~~utilised~~ utilized to cause the vehicle to descend.

4. (Previously presented) A system according to claim 2 wherein said regenerative means includes a turbine, driven by the flow of seawater, to provide an electrical output.

5. (Original) A system according to claim 4 wherein said electrical output is processed locally by a receiver circuit configured to produce a smoothed electrical signal for application to a charging circuit.

6. (Original) A system according to claim 5 wherein said charging circuit is controlled by an electronic control system to distribute charging current to the battery.

7. (Currently Amended) A system according to claim 2 wherein said regenerative means is dynamically adjusted according to [[~~the~~]] a pressure differential ~~there~~ across the regenerative means during said flow of seawater.

8. (Previously presented) A system according to claim 1 wherein the buoyancy chamber comprises a glass, steel or titanium sphere.

9. (Previously presented) A system according to claim 1 wherein the buoyancy chamber can withstand pressures at undersea depths of 3000m or greater, and has a capacity to hold up to 34kg of seawater.

10. (Previously presented) A system according to claim 1 wherein the pressure multiplier comprises input and output surfaces in pressure transmitting relation, the output surface having a surface area less than the surface area of the input surface, the pressure increase generated by the pressure multiplier being determined by the ratio of surface areas of the input and output surfaces.

11. (Original) A system according to claim 10 wherein the input surface comprises a plate.

12. (Previously presented) A system according to claim 10 wherein the output surface comprises a plunger or piston.

13. (Original) A system according to claim 12 wherein the pressure multiplier includes an output and comprises a non-return valve or valves associated therewith.

14. (Currently Amended) A buoyancy control system ~~according to claim 1 further~~ for controlling the buoyancy of an underwater submersible, the system comprising:

a buoyancy chamber having a seawater inlet and a seawater outlet;

a power supply used to power at least one electrical component of the system;

a hydraulic system for pumping seawater from the buoyancy chamber through the outlet, the hydraulic system comprising a hydraulic pump and a pressure multiplier, the hydraulic pump for applying pressure to the pressure multiplier, and the pressure multiplier

for increasing the pressure applied thereto by the hydraulic pump, and for applying the increased pressure to seawater from the buoyancy chamber to thereby pump out the seawater;

a flexible bag provided internally of the buoyancy chamber; and

expanding means for causing expansion of said flexible bag.

15. (Currently Amended) A system according to claim 14 wherein said expanding means comprises a ~~pressurised~~ pressurized container for providing gas to the flexible bag.

16. (Currently Amended) A system according to claim 15 wherein a volume of the ~~pressurised~~ pressurized container and the pressure of the gas therein are selected according to a mission profile of a submersible vehicle, the system of which forms a part.

17. (Previously presented) A system according to claim 1 further comprising an electronic control system having means for transmitting data concerning the state of operation of the system to a home station.

18. (Previously presented) A submersible vehicle including a buoyancy control system according to claim 1.

19. (New) A system according to claim 1 wherein the volume varying means comprises a flexible bag containing a volume of gas and provided internally of the buoyancy chamber.

20. (New) A system according to claim 1 further comprising pressure balancing means for increasing the pressure in the buoyancy chamber to thereby reduce the energy used by the hydraulic system for pumping seawater therefrom.

21. (New) A system according to claim 20 wherein said volume varying means comprises a flexible bag containing a gas and provided internally of the buoyancy chamber, and the pressure balancing means comprises a pressurized container for providing additional gas to the flexible bag.

22. (New) A system according to claim 20 wherein the pressure balancing means comprises a mechanical spring.